Carter County & Town of Ekalaka
Montana
All Hazard Pre Disaster Mitigation Plan

Prepared For:
Montana DES
FEMA

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List of Acronyms

COE	U.S. Army Corps of Engineers
CRP	Conservation Reserve Program
DES	Montana Disaster and Emergency Services
DMA	Disaster Mitigation Act
DNRC	Montana Department of Natural Resources and Conservation
DOI	U.S. Department of Interior
MDOT	Montana Department of Transportation
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
HUD	U.S. Department of Housing and Urban Development
LEPC	Local Emergency Planning Committee
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
NWS	National Weather Service
PDM	Pre-Disaster Mitigation Plan
RFC	River Forecast Center
USFS	U. S. Forest Service
USGS	U. S. Geological Survey
WAPA	Western Area Power Administration

Carter County All Hazard Pre-Disaster Mitigation Plan

I. Introduction

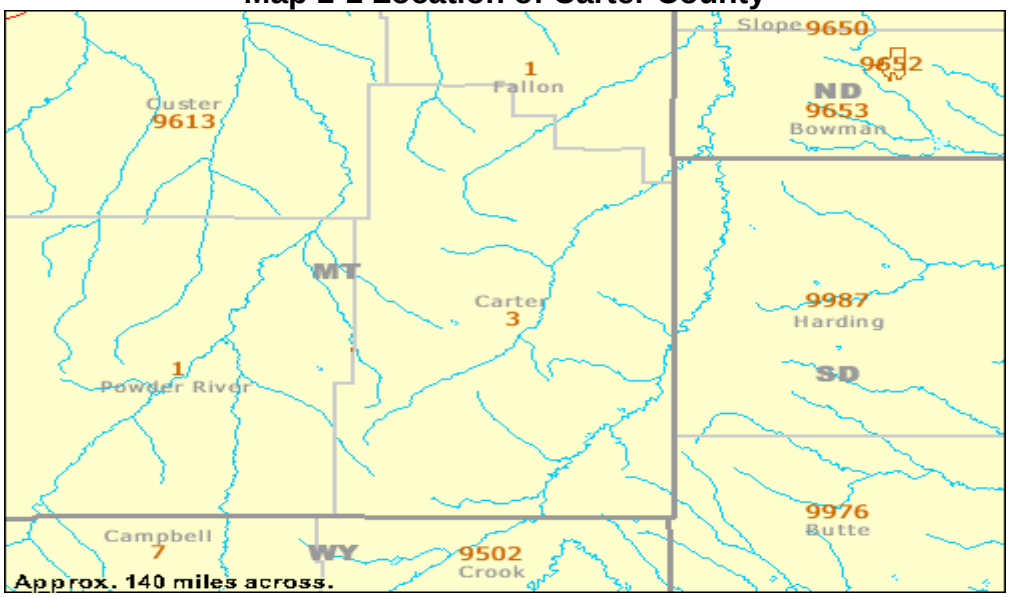
1.1 Location:

Carter County covers 3,348 square miles in the Southeast corner of Montana bordered by Wyoming on the South and South Dakota on the East, the Powder River and Custer County on the West and Fallon County to the North. The Little Beaver Creek, Box Elder Creek and Little Missouri River all run South West to North East through the county. The town of Ekalaka is the county seat and the only incorporated town within the county. This plan includes the town of Ekalaka as a part of Carter County. References to Carter County also include Ekalaka.

The Chalk Butte area, southwest of Ekalaka, is the site of historic Indian culture. Medicine Rock State Park with its great sandstone pillars, by Highway 7 is at the north entrance to Carter County. As its name implies, Medicine Rocks was a place of "big medicine" where years ago Indian hunting parties conjured up “magical spirits”. Ekalaka was named after the Sioux Indian woman who married Dave Russell who settled there after his wagon broke down and he started a bar.

The elevation around Carter County is surprisingly high at 3500’. Carter County is 38% public lands. The topography is varied. The Custer National Forest covers a large part of the county. The Powder River Breaks are extremely rough and flatlands are close to desert conditions. There is good farming in the county.

Map 1-1 Location of Carter County



1.2 Population:

Population in 2000 was 1360 (Census 2000) with 73% over age18. In Ekalaka, the county seat and only incorporated town, population 410, 30% of the residents are over 65 compared to 18% countywide and 12.4% nationally. This documents the high percentage of senior citizens live in Ekalaka, and the need for close medical access. All 811 housing units in Carter County are single family owned homes. Population density is 0.4 people per square mile and housing units density are 0.2 units per square mile, or about one home per every 0.5 square miles.

Carter County: Population
Table 1-2

Geography	Population	18 & older #	18 & older %	60 & older #	60 & older %	65 & older #	65 & older %
Carter County	1,360	999	73.5	323	23.8	244	17.9
COUNTY SUB DIVISION AND PLACE							
Ekalaka CCD	876	639	72.9	226	25.8	184	21
Ekalaka town	410	321	78.3	138	33.7	123	30
Remainder of Ekalaka CCD	466	318	68.2	88	18.9	61	13.1
Little Missouri CCD	484	360	74.4	97	20	60	12.4
Little Missouri CCD	484	360	74.4	97	20	60	12.4
PLACE							
Ekalaka town	410	321	78.3	138	33.7	123	30

1.3 Travel

The average commute to work is 22.5 miles. There are 835 miles of gravel roads in Carter county, many impassible when wet or requiring four-wheel drive vehicles. The school bus route has some students that travel 50 miles one way to get to school in Ekalaka; enrollment was 175 K-12 students in 2002. Other Carter Co. elementary schools in Alzada, Coal Creek and Hammond totaled 31 elementary students by comparison.

The Carter County Pre-Disaster Mitigation Plan profiles the significant hazards facing the county and identifies mitigation strategies to reduce their impact.

1.4 Executive Summary of the Plan:

The Carter County Pre-Disaster Mitigation Plan covers the following:

- ❖ Identify and quantify disaster events that are most probable and destructive
- ❖ Identify areas within the county that are most vulnerable
- ❖ Develop goals for reducing the effects of a disaster event
- ❖ Develop specific projects for each goal
- ❖ Develop procedures for monitoring progress and updating the plan
- ❖ Officially adopting the plan

The plan is organized into sections covering the planning process (section 2), the risk assessment (section 3), mitigation strategies (section 4), and plan maintenance (section 5).

1.5 Scope and Plan Organization:

Mitigation activities help to reduce or eliminate damages from future disaster events. The four basic approaches to mitigation include:

1. **Altering the hazard** to eliminate or reduce the frequency of its occurrence, such as thinning the forest.

2. **Averting the hazard** redirecting the impact away from a vulnerable location to shield people and development from harm.

3. **Adapting to the hazard** modifying structures and altering design standards of construction to reduce vulnerability to damage which would include complete the paving of highway 323 to improve emergency access to medical care and other help.

4. **Avoiding the hazard** keep people away from the hazard area or limiting development and population in a risk area. Enforcement actions include zoning regulations or building codes and ordinances to restrict or deny access to specifically identified risk area.

1.6 Acknowledgements

Many groups and individuals have contributed to development of the Carter County Pre-Disaster Mitigation Plan. The local DES Coordinator and the Montana State Hazard Mitigation Officer provided significant guidance and support to all aspects of plan development. The National Weather Service in Billings and Glasgow provided historic accounts of severe weather events and guidance to other weather data available on the Internet. The Bureau of Land Management was also working on mitigation of fires in Carter County and we worked cooperatively on this project. Numerous elected officials, city and county personnel participated in the planning process and contributed significantly to the plan's development.

II. PLANNING PROCESS 201.6(b) (1-3), 3-5, 4-5

Documentation of the Planning Process

2.1 How the Plan was Prepared.

The local Emergency Planning Committee met September 15 and December 1, 2003 as well as Oct 4 & 18, 2004. Information was gathered from the stakeholders' discussions, their completion of risk assessments, vulnerability studies, and data from the National Weather Service, existing plans, studies and reports and historical data on Carter County. This was also open to the public. A diverse cross-section of ages and occupations were present in the courthouse courtroom for the meetings. **See list of attendees in the appendix.**

2.2 Who was Involved in the Process.

The following attended first meeting about the pre-mitigation grant-planning meeting and were a wealth of knowledge. Candy Loehding, DES coordinator; Marion Kerr, Public Health Nurse; Ed Powell, Weed board; Phil Cook, Dahl Memorial Maintenance Department; Glenda Bailey, Dahl Memorial Healthcare; Janell Dean Ekalaka Town Clerk, Elston Loken, Town of Ekalaka Public Works and Fire Chief; Rusty Jardee Carter Co. Sheriff; Dale Diede Dahl Memorial Physician Assistant, Coroner; Terri Buck, EMT, Milton Markuson, Carter County Commissioner. The Bureau of Land Management was also involved in the second meeting collaborating resources with another project. Follow-up meetings were held October 4 & 18, 2004. See appendix for roster of attendees.

2.3 Others Involved in Planning Process and Meetings.

The Billings Weather Service gave valuable input into data needed to document historical weather patterns and weather events. The BLM was also a valuable resource as well as Fire Logistics Incorporated who was working on a plan to mitigate wildfire.

2.4 Plan Review.

Review copies of the draft plan were provided to the DES Coordinator for distribution in hard copy and were available for the public in the library. Plan reviewers included county commissioners, law enforcement, health, fire, emergency personnel and local officials. Public comments were submitted to the DES Coordinator after a review period. A review of the plan for completeness was conducted after the initial comments were addressed. Plan copies were then submitted to the Montana DES Hazard Mitigation Officer and the Montana FEMA representative for review. Upon receipt of comments, the plan was finalized and taken to the County commissioners for adoption.

Future comments on this plan should be addressed to:

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HISTORICAL

III. Risk Assessment

3.1 Identifying Hazards 201.6(c) (1), 3-10, 4-5

A note: Disasters would be a lot worse if the people in this area were not so resilient and independent. People naturally stock up on groceries because they live 35 miles from a grocery store and many people do have generators on their farms and ranches. They can't depend on hiring things done; they learn how to take care of themselves, their animals and their property.

The committee listed all possible hazards of Carter County (in no order except from the list in worksheet #1) as stock dam failure, drought, expansive soils by Mill Iron, extreme heat, flood, hailstorm, land subsidence – sinkholes, severe winter storms tornado, wildfire and windstorms known as micro-bursts.

Historical look at prevalent hazards:

Drought: 2002, 2003 were extreme drought years. All through the 1980s Carter County experienced grasshopper infestation and drought. The state of MT was the 7th driest for the months of June – August since records were kept. Normal precipitation in Ekalaka as documented by the NOAA for 1961-1990 was 16.68 inches. According to the Western Region Climate Center website, the table shows averages and extremes in precipitation in inches

CARTER COUNTY: PRECIPITATION IN INCHES
TABLE 3-1A
HTTP://WWW.WRCC.DRI.EDU/HTMLFILES/MT/MT.PPT.EXT.HTML

LOCATION	Yrs. In study	Average precip.	Max in one year.	Year if max precip.	Min. in one year	Year of min.	Most/ day
Albion	1948-2002	13.77	19.26	1962	7.8	1952	3.3
Ekalaka	1896-2002	14.83	26.95	1971	6	1919	3.68
Ridgeway	1952-2002	13.27	19.41	1977	6.56	1988	3.01
Belltower	1949-2002	13.54 |	| 21.99	1982	7.1	1988	4.00

Extreme Heat: Records were broken in every direction from Carter County relating to extreme heat in the summer of 2003. Ekalaka, the county seat of Carter County, has a normal maximum temperature in July of 86.4 degrees, a normal minimum of 55.8 degrees and a median of 71.2 degrees. In August, according to the NOAA statistics for 1961-90, the normal maximum is 85.1 degrees, the normal minimum 53.6 degrees and the median is 69.1 degrees. Carter County uses cooperative weather observers to monitor temperature and precipitation.

RECORD HEAT
TABLE 3-1B

Billings, MT	Tied daily high minimum for the month	August 15, 2003	73°F	73°F	August 23, 1937
Bismarck, ND	Consecutive days with 100°F or greater	August 17, 2003	4 consecutive days with 100°F or greater; August 14-17	3 consecutive days with 100°F or greater	August 17-19, 1959
Cheyenne, WY	Number of days with 90°F or greater in a season	August 22, 2003	32 days of 90°F or greater	31 days of 90°F or greater	Summer of 1936

Fire: A wildfire is an unplanned fire, a term that includes grass fires, forest fires and scrub fires, be it man caused or natural in origin. Severe wildfire conditions have historically represented a threat of potential destruction within Montana. Negative impacts of wildfire include loss of life, property and resource damage or destruction, severe emotional crisis, widespread economic impact, disrupted and fiscally impacted government services, and environmental degradation.

Wild land/urban interface are defined as the zone where structures and other human development meet or intermingle with undeveloped wild land or vegetative fuel. In southeast Montana, the wild land/urban interface typically is where the edge of local communities adjoins agricultural fields, many of which are in CRP or adjoin BLM land.

U.S. Forest Service (USFS) data for 1990 indicate that 25.7 percent of reported wildfires were caused by arson. Other ignition sources were debris burns (24 percent); lightning (13.3 percent); and other (16.7 percent). Lightning can present particularly difficult problems when dry thunderstorms move across an area suffering from seasonal drought. Multiple fires can be started simultaneously, as is often the case in southeast Montana. In dry fuel areas, these fires can cause massive damage before containment. Dry timber and farmland in CRP, is the primary fuel for Carter County wildfires. The rate of spread of a fire varies directly with wind speed. Numerous wildfires have impacted residents in Carter County of Montana. Every year numerous fires are documented. These below were fires causing extensive damage to people or property.

Labor Day 2002 The Kraft Spring Fire burned 78,000 acres.

The Halloween Fire of 1999 started 18 miles from town with such severe winds that the town of Ekalaka had to be evacuated. It burned about 8000 acres and livestock was lost. At that same time the Red Barn Fire started that burned to a road in South Dakota covering 7,000 acres. The Halloween fire (Johnstone Fire) burned about 200 ton of the Castleberry's hay bales. There was no phone service during some of the highest Fire activity, although the key people had radios but not enough of them.

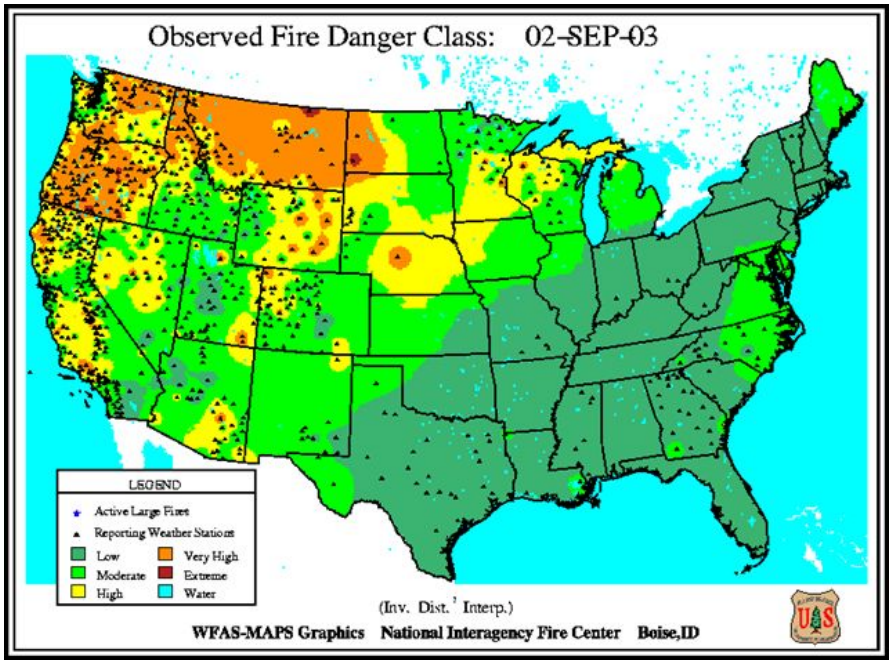
In 1993 Gary Clem had a heart attack and died when a wheel bearing on his car caught fire. 200 acres of land burned before the car and fire were put out. This fire burned to the buildings on the Brad McCabe Farm, wind fueled the flames through a stubble field.

1992 Medicine Rock Fire 8000 acres burned.

1988 The Brewer Fire burned about 58,000 acres. A grader driver was injured in the fire and later died.

1985 Jardee Fire Dry lightning started a fire behind Whitey Jardee's house burning 400 acres and Whitey was seriously injured. He spent several months recovering in a Burn Unit in Salt Lake City, UT.

Map 3-1



Severe Winter Storms: Halloween to November 3, 2000 a severe ice storm hit eastern Montana. Carter County experienced power outage for a week because the heavy ice broke power lines and power poles. FEMA helped Southeastern Electric Coop replaced $80,000 worth of poles. The utility staff had worked day and night to get people back on line. There were a number of property losses of meat from freezers because of the lack of electricity for a week but no loss of life. Many did not have generators. Cattle that time of year are on stock wells, but because the snow was so wet, the animals survived on that moisture.

Bad winter storms occurred the winters of 1977-78 and 1978-79. Disasters were declared and the state was called in to help. 1986 was also a severe winter as was 1993 in the south part of the county.

The winter of 1964-65 is remembered as a winter with a lot of storms. The major storm, in mid December, caused large livestock losses. The wind chill was reported at -90° for several hours during this 24 hour "Blizzard of 64". May 1, 1967 was a snowstorm that caused a great loss of livestock and a disaster was declared. Main Street of Ekalaka had 4 to 5 foot drifts of wet snow.

According to the Western Region Climate Center website, the table shows averages and extremes in snow precipitation

CARTER COUNTY: SNOWFALL IN INCHES
TABLE 3-1C

Snowfall	Average	Max. snow	Year of max	Number of days		
				> than .01"	> than .05	>1."
Albion	24.6	58.5	1996	36	7	1
Ekalaka	27	45.7	1999	37	7	2
Ridgeway	34.2	79.6	1996	36	7	2
Belltower	30.4	75.5|	1971	52	7	1 |

Dam Failure: is a low risk. There was one dam failure in 1975 when the Hanson's dam broke. It had rained for the week before and that day the county got five more inches in the saturated soil, breaking the dam. The Box Elder Creek that is 20' wide usually swelled to a mile wide. Fences were wiped out when the dam broke.

Wind: Carter County is vulnerable on an annual basis to significant straight-line wind damage (sometimes referred to as micro bursts, with less than a 2.5 mile wide path, and macro bursts, with paths wider than 2.5 miles), and large-scale high winds that occur in the fall through the spring. A few of the documented events:

2002 Microburst: A microburst in the center of the county did considerable property damage to four ranches, destroying calf shelters and other buildings. A full 500-gallon propane tank was blown over and rolled, breaking the valve near one home. No one was injured in the storm.

Winds can also be a hazard when dealing with fire. A slurry plane is based at the Carter County Airport. The airport runway only runs one direction. With cross winds, there are times planes cannot land or take off.

Radiological: There are heavy concentrations of uranium that naturally occur in the soils in a wide swath from Denver to Medora North Dakota and across to Marmoth, ND.

Transportation: A high percentage of county residents live 50-75 miles from the closest ambulance. Carter County residents face the hazard of getting help in the golden hour. A life flight helicopter takes four hours to get person to help. Rapid City is 75 miles closer than Billings but Highway 323 is gravel. For a major medical disaster, severely injured would travel to Billings (245 miles), Bismarck or Rapid City (170 miles). Highway 323 is the major "farm to market' highway, in spite of the fact that 13 miles of it is not paved. All the timber products and 95% of the Carter County cattle are shipped south to Rapid City over highway 323 with 13 miles of gravel. Fallon and Custer County agriculture products are shipped over this road. Paving the road to become a state highway would reduce the county responsibility for the road.

Communicable Disease & Bioterrorism

If there is a communicable disease, Ekalaka has a Medical Assistance Facility that allows 72 hours of care. The nursing home has a capacity of 29. Otherwise all transportation to a larger medical facility would require travel over highway 323, 13 miles that isn't paved.

There have been incidences of rabies in the 1980s, especially in cattle in Carter County. In fact a documentary video was produced to educate veterinarians and ranchers of the symptoms and safe treatment of rabies in cows because it is quite rare but there were documented cases of it in Carter County. At least one person per year gets rabies shots because of exposure to suspected rabid animal.

West Nile infected a human in 2003 and horses in 2002. Insect infestations caused great damage for 18 years in the 1980s and 90s in Carter County. Before then it was 50 years back to the 1930s when insects destroyed crops, increasing the economic loss during the depression,

3.2 Hazard Priority

Top hazards, based on LEPC members input and results of vulnerability study are as follows:

1. **1.** Wildfire
2. **2.** Severe winter storms
3. **3.** Drought, extreme heat
4. **4.** Windstorm and hail

Carter County: Hazard & Vulnerability Summary
Table 3-2

Hazard	Probability of Disastrous Event (chance in any given year)	Property Impact	Population Impact	Economic Impact
Earthquake	Low	Low	Low	Low
Extended Cold & Winter Storms	High	High	High	High
Hazardous Materials & Water Pollution	Low	Low	Low	Moderate
Wildfire	High	High	Moderate	High
Flooding	Low	Low	Low	Low
Heat & Drought	High	High	Low	High
Severe Thunderstorms	High	Moderate	Low	Moderate
Communicable Disease & Bioterrorism	Low	Low	Moderate	Moderate
Dam Failure	Low	Low	Low	Low
Aviation	Low	Low	Moderate	Low
Terrorism & Violence	Low	Low	Low	Low
Structure Fires	Low	Moderate	Low	Low
Wind	High	High	Low	High
Communicable Disease	Low	Low	Low	Low
Landslide	Low	Low	Low	Low

SUMMARY

This risk assessment represents an approximate history and estimated vulnerabilities to the community from the hazards identified. As with any assessment involving natural or man-made hazards, all potential events may not be represented here and an actual incident may occur in a vastly different way than described. This assessment, however, will be used to try to minimize damages from these events in the future.

Every type of event is different, ranging from population to property to economic impacts. Incidents also have different probabilities and magnitudes even within hazards. For example, a small earthquake will be different than a large earthquake and a moderate flood will be different from both of those. In an attempt to rate hazards and prioritize mitigation activities, a summary of the impacts from an event are presented in this table. For more information on these determinations, see the individual hazard profiles.

3.3 Probability of future events

Hazards were identified using a risk assessment chart developed by the Montana Dept of Emergency Services charted by probability, frequency, historical data, EOP addressed, population impact and property impact. From those Carter emergency stakeholders and representatives at the meeting they ranked the following hazards:

Those with a high or medium property impact in Carter County include wildfire, drought, wind or hail and winter storm. The only hazard ranking high or medium in population impact was wildfire especially due to isolation and response time. Those with a frequency through history in Carter County include fires, winter storms, summer storms, lightning storms, and drought.

Man-made Disasters Probable
Because of the international climate we live in today, we also need to consider the probability of HAZMAT as a future risk, whether it is through spillage from the various transpiration systems through the county or dangerous chemicals released through illegal drug making such as methamphetamine labs. Because if Carter County's remote location, it could be a clandestine location for illegal drug making.

One storage tank of anhydrous ammonia, known as McCabe's tank holds 15,000 gallons. A portable tank is missing in the Bowman, ND area. Propane tanks are available at Stieg's, Southeast Electric, D&J Diesel and gas, Fruit Services and the hospital has a large propane tank. A 50-60,000 gallon fuel tank owned by Fidelity Gas, a subsidiary of MDU Resources of Bismarck, ND is located along highway 212. Fidelity also has a 16" high-pressure gas pipeline that crosses through Carter County. Shell Oil has a 16" oil pipeline bisecting the middle of the county North to South, east of Plevna to Wyoming. A 24' pipeline is proposed by Williston Basin but environmental issues have delayed that for at least three years.

Aircraft – Carter County is a fly-over practice area for Ellsworth Air Force Base, near Rapid City, SD, 170 miles away. B-1 bombers fly 200-300' off the ground to practice flying under radar. Country folks say that you can read the numbers on the plane as they fly over; to give you an idea how low they fly. The air force planes don't fly over populated areas.

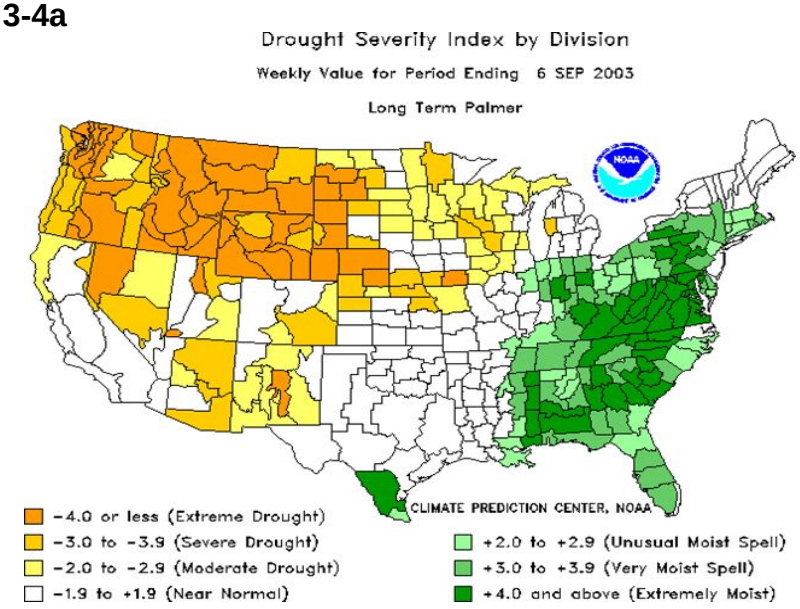
There was a B-1 bomber crash in September of 1997. The four servicemen on board the plane were killed and the plane crash started a grass fire.

3.4 Profiling Hazard Events 201.6(C) (I) 3-14, 4-5

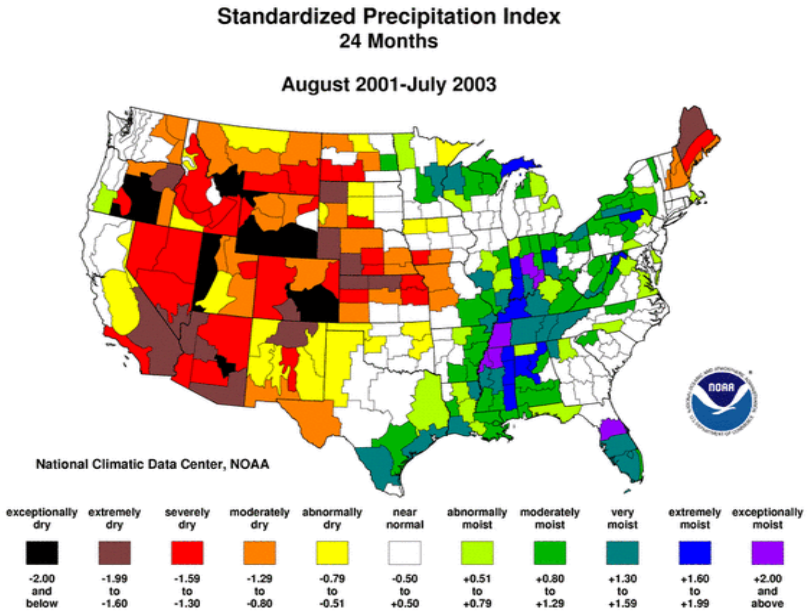
Resources: www.hazardmaps.gov, National Weather Service, Western Regional Climate Center

Description of location and extent

Drought: Map 3-4a

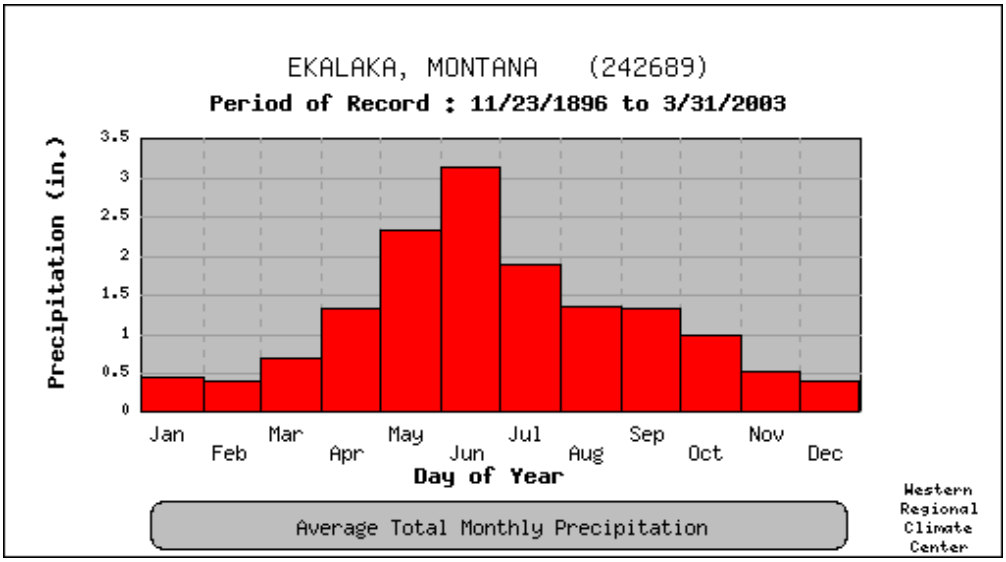


Precipitation: Map 3-4b



Historic Impacts
http://www.wrcc.dri.edu/

Drought:
Highest precipitation in a month happened in July of 1993 with 9.03 inches, and 8.13 inches in June of 1971. **Graph 3-4**



There are 8 weather stations in Carter County. Some have just been recording data since 1950. Average precipitation in Carter County is around 13.5 inches with around 28-30" of snow depending on area of the county. This chart shows the average moisture by month.

Historic Impacts
Many months had less than a tenth of an inch of moisture in the last 30 years as seen in this chart from the Western Regional Climate Center data from 1971-2003. (http://www.wrcc.dri.edu/htmlfiles/mt/mt.ppt.ext.html)

CARTER COUNTY: DROUGHT IN YEARS
TABLE 3-4

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lowest Precipitation (in.)	0.04	0.00	0.06	0.21	0.20	1.14	0.24	0.05	0.09	0.16	0.04	0.00
Year Lowest Occurred	1974	1992	1981	1977	1998	1988	1976	1971	1993	1987	1994	1992

Hail: The National Weather Service's definition of severe hail is ¾" or larger. There were 12 hailstorms in Carter County from 1959 to 2001 that fit into the definition of ¾' or larger. (www.hazardmaps.gov)

Tornado: Carter County is listed as low risk. Database for tornado statistics starts from 1950 on. In that time there have been 14 tornado reports, with six since 2994. Two of those rated F2 or higher. One tornado caused 2.5 million in damage (1961), worth $15.3 million in 2003 dollars. There has only been one injury reported.

Lightning: One night of thunderstorms could produce up to 10,000 cloud-to-ground strikes in our region! With outdoor activity in Carter County in the summer, we need to consider education on what to do in a lightning storm and the possibilities of what could happen. Montana records show 20 recorded lightning deaths, and 44 recorded injuries since keeping statistics.

Landslide: There is an arch shaped swath of landmass in the lower half of the county that is listed as high susceptibility to landslides although there were no costly landslides events recorded from 1928 – 1999, according to www.hazardmap.gov.

Thunderstorm: Thunderstorms cause the greatest threat from severe weather in this region (hail, winds and tornadoes).

Non-Thunderstorm High Winds: Winds sustained at 40 mph or higher, and/or gusts to 58 mph or higher are considered high winds. These winds can hit as unexpectedly as thunderstorm winds, but last much longer (hours to days).

Winter Storms – Ice/Blizzards/Heavy Snow
Winter storms include ice storms (more than a 1/4 inch accumulation of ice), heavy snow (6" in 8 hours or 8" in 24 hours, or a combination of significant snow and visibilities less than a ½ mile) and blizzards (winds sustained at 35 mph with visibility below a 1/4 mile for at least 3 hours).

A major disaster was declared December 7, 2000 after a severe winter storms that affected eastern Montana on October 31, 2000 and continuing through November 20. The counties of Carter, Fallon, Richland, Roosevelt, Sheridan and Wibaux were eligible for Public Assistance through FEMA. The Southeast Electric Coop received funding for new poles as the weight of the heavy freezing rain and snow broke power lines and poles.

A winter snowstorm brought wind chill factor of minus 90 degrees for 20 hours. Those animals exposed to the elements had high loss. In April of 1997 a wet snowstorm with 24" of snow caused large livestock losses. Coldest mean temperature from 1971-2002 was in 1979 with 9 below zero for January and zero degrees as the mean for February (Mean temp - half of the temps. for the month were above and half below.) In 1983 the mean low for December was minus 6.9 degrees.

3.5 Assessing Vulnerability: Identifying Assets 201.6(c) (2) (ii) (a), 3-18

1. Overall Summary of each hazard and impact on community

Hazard Prioritization

The mitigation strategy is the course of action Carter County hopes to take to prevent losses from disasters in the future. Rather than wait until a disaster occurs, they have developed this strategy to move in a proactive direction in disaster prevention. All losses cannot be entirely mitigated, however, some actions can be taken, as funding and opportunities become available, that may reduce the impacts of disasters and eventually save taxpayers money. The mitigation strategies were developed based on direct input from the communities and prioritized through a multi-step process.

Attendees of the Sept. 15, 2003 public meeting were individually polled on the probability of a disastrous event occurring from each hazard, the magnitude or impact of that event to the community, and the ranking of each hazard for mitigation. The results are as follows.

Priority Ranking Survey Results for Carter County
Table 3-5a

Hazard	Probability of Disastrous Event[1]	Magnitude[2]	Priority Rank
Wildfire	High	High	1
Extended Cold & Winter Storms	Moderately High	High	2
Heat & Drought	High	High	3
Wind	High	High	4
Severe Thunderstorms	High	Moderate	5
Communicable Disease & Bioterrorism	Low	Moderate	6
Radiological /Hazardous Materials / Water Pollution	Low	Low to moderate	7
Structure fires	Low	Low to moderate	8
Aviation Accident	Low	Low	9
Flooding	Low	Low	10
Dam Failure	Low	Low	11
Terrorism & Violence	Low	Low	12
Landslide	Low	Low	13
Earthquake	Low	Low	14
Communicable Disease	Low	Low	15

[1] Chance in any given year
[2] Severity/impact to community

2. Types and number of existing and future buildings, infrastructure and critical facilities

The courthouse, hospital and grade school are all within one block in Ekalaka. The high school is two blocks away. The Police station and city clerk are located on Main Street also a block from the courthouse. Volunteer fire equipment is located in the towns of Ekalaka and Alzada and various ranches in the county. The following table shows the amount of people that are located in varied structures at a given time.

CRITICAL POPULATIONS WITH IN CARTER COUNTY TABLE 3-5B		
Structure	**Capacity**	**Notes**
Schools		
Ekalaka Elementary School	54 Students	Grades K-6th
Carter County High School	89 Students	Grades 7th-12th
Rural Schools		
Alzada	5 Students	
Hawks Home	6 Students	
Hammond	8 Students	
Misc.		
Dahl Memorial Nursing Home	23 Residents	
Dahl Memorial Critical Access Hospital	6 bed capacity	
Carter Manor	14 Apartments	Apartment Complex for the Elderly with two handicapped units
Trails End Ranch Bible Camp	150 campers every week throughout the summer	Camp is located about 7 miles outside of Ekalaka in the Ekalaka Hills
Camp Needmore	100 person Capacity	Only used during the summer and fall months for camping, reunions, specials camps, and special functions.
Yost Day Care	15 Children	

CARTER COUNTY CRITICAL INFRASTRUCTURE TABLE 3-5C		
Structure	**Value**	**Information Source**
Critical Access Hospital, Clinic and Nursing Home	$1,125,000	Insurance
Courthouse	$1,412,400	Insurance
County Shop	$160,650.	Insurance

Carter County Critical Infrastructure Cont.		
Museum	$176,715	Insurance
Airport Hangers	$20,000	Insurance
Camp Needmore	$153,875	Insurance
Heat Plant for Courthouse and Hospital	$101,745	Insurance
County Shed	$53,550	Insurance
Alzada Fire Hall, Office/storage	$42,840	Insurance
Fire Hall, Town of Ekalaka	$137,901	Insurance
Water Treatment: Ekalaka	$406,418	Insurance
Sewer Treatment: Ekalaka	$616,479	Insurance
Town of Ekalaka, Office	$97,491	Insurance
Town of Ekalaka, Fire Vehicles	$563,000	Insurance
Town of Ekalaka, Law Enforcement Vehicles	$ 20,000	Insurance
Critical Communications Facilities		
Northern Repeater Tower[3]	$150,000	
Southern Repeater Tower	$150,000	
Utilities		
Southeast Electric[4]	$4,967,000	Financial Statement
MidRiver's Telephone Cooperative Cable & Communications Corporation	$3,960,000 $5998,017	Financial Statement
Range Telephone Cooperative	• 4 Buildings Valued @ $1,000,000 • Fiber &Copper Cable $4,000,000	Financial Statement

[3] Dispatch for Carter County is done by Fallon County and Powder River County. The dispatch centers are important infrastructure for Carter County.

[4] This may not be actual replacement values. The county has about 2/3 of the total 1600 miles of line owned by the coop. Southeast Electric provides electrical power to virtually all of Carter County and portions of surrounding counties. The headquarters are located in Ekalaka and two sub-stations are located within the county.

3.6 Assessing Vulnerability: Estimating Potential Losses 201.6(c) (2) (ii) (B), 3-22

Vulnerability Ranking for Hazards in Carter County, Montana

This survey has been considered when developing priorities; however, a greater emphasis has been placed on the results of the risk assessment. In addition, since the survey was initially conducted, other hazards have been added and modified. Results of the risk assessment were used in choosing the rankings in each category. The methodology gives each of the criteria a low, medium, or high ranking dependent on a set threshold. The thresholds used in this analysis are shown in **Table 3-6a**.

VULNERABILITY RANKING FOR CARTER COUNTY MONTANA COMPOSITE SCORES TABLE 3-6A	
History	
0-1 Major Incidents in the past 100 years	Low
2-3 major incidents in the past 100 years	Moderate
4 or more major incidents in the past 100 years	High
Average Vulnerability	
Less than 1% casualties/damage	Low
1% to 10% casualties/damage	Moderate
More than 10% casualties/damage	High
Maximum Threat Casualties and Property Damage	
Less than 5% casualties/damage	Low
5% to 25% casualties/damage	Moderate
More than 25% casualties/damage	High
Probability in a Five-Year Period:	
0 or 1 incidents	Low
2 to 9 incidents	Moderate
10 or more incidents	High

Composite scores for each hazard were then assigned by multiplying the score for each factor by its weighting factor and added together. The rating scores and weighting factors are shown in **Table 3-6b**.

RATING SCORES TABLE 3-6B	
Rate	**Points**
Low	0-3 points
Moderate	4-6 points
High	7-10 points
Weighting Factors	
Factor	**Points**
History	2 points
Average Vulnerability	5 points

Probability	7 points
Maximum Threat	10

Using this methodology, the rankings shown in **Table 3-6c** were given to the hazards. Based on these prioritizations, goals and objectives were developed by LEPC members.

Vulnerability Ranking for Hazards in Carter County, Montana
Table 3-6c

Hazard	History	Vulnerability	Maximum Threat	Probability	Rank
Wildfire	High	High	Moderate	High	1
Extended Cold & Winter Storms	High	Moderate	High	Moderate	2
Heat & Drought	High	High	High	High	3
Wind	High	Moderate	Moderate	Moderate	4
Severe Thunderstorms	High	Moderate	Moderate	Moderate	5
Communicable Disease & Bioterrorism	Moderate	Moderate	Low	Moderate	6
Radiological/ Hazardous Materials	Low	Low	Low	Low	7
Structure fires	Low	Low	Low	Low	8
Aviation Accident	Low	Low	Low	Low	9
Flooding	Low	Low	Low	Low	10
Dam Failure	Low	Low	Low	Low	11
Terrorism & Violence	Low	Low	Low	Low	12
Landslide	Low	Low	Low	Low	13
Earthquake	Low	Low	Low	Low	14
Communicable Disease	Low	Low	Low	Low	15

1. Estimate of potential dollar losses to vulnerable structure.

There are 808 housing units in Carter County. Of those 543 are occupied and 98 have a rental contract with the average monthly rent of $208. Half of the rental contracts, which include 49 units, pay no fee, meaning they belong to relatives not requiring payment or may be a parsonage. The average gross rent was $325, which means it included utilities. There were 268 housing units vacant at the time of the 2000 census. 44% of those were used seasonally. There are 162 houses that are occupied by their owners. Some of the houses have been removed because they were considered inadequate living facilities for this environment. **Table 3-6d** shows information regarding the type of structure, year built, and the percent of the housing it makes up as well as the number of houses per type of structure and year built.

CARTER COUNTY HOUSING ADDITIONAL INFORMATION TABLE 3-6D		
Housing Units	**# of Units**	**Percent of Housing**
1-unit, detached	581	71.6
1-unit, attached	14	1.7
2 units	7	0.9
3 -4 units	2	0.2
5-6 units	2	0.2
10-19 units	13	1.6
Mobile Home	190	23.4
Total	**809**	**99.6%**
Year Built	**# of Units**	**Percent of Housing**
1999 to March 2000	9	1.1
1995-1998	28	3.5
1990-1994	33	4.1
1980-1989	83	10.2
1970-1979	164	20.2
1960-1969	78	9.6
1940-1959	178	21.9
1939 or earlier	23	29.3

2. Assessment Value Description of methodology used to prepare estimate (worksheet 4-5) Land Use Property Values by Sub-Area based on depreciated

CARTER COUNTY: LAND USE PROPERTY VALUES[5] TABLE 3-6E		
Value	**Number of Units**	**Percent Makeup**
Less than $10,000	21	13.0
$10,000 to $14,999	21	13.0
$15,000 to $19,999	18	11.1
$20,000 to $24,999	9	5.6
$25,000 to $29,999	0	0.0
$30,000 to $34,999	13	8.0
$35,000 to $39,999	11	6.8
$40,000 to $49,999	19	11.7
$50,000 to $59,999	6	3.7
$60,000 to $69,999	0	0.0
$70,000 to $79,999	7	4.3
$80,000 to $89,999	4	2.5
$90,000 to $99,999	3	1.9
$100,000 to $124,999	2	1.2
$125,000 to $149,999	2	3.1
$200,000 to $249,999	6	3.7
$250,000 to $299,999	2	1.2
$500,000 to $749,000	5	3.1
$750,000 to $999,999	6	3.7
$1,000,000 or more	7	4.3
Median 34600	162	100%

[5] Information according to the census 2000. The larger property values include their farm/ranch operation.

3.7 Assessing Vulnerability: Analyzing Development Trends 201.6 (c) (2) (ii) (B), 3-22

1. Description of land uses and development trends in the community.

Carter County is agriculture-based across the whole county, with population density of 0.4 people per square mile and housing units density are 0.2 units per square miles. Population in 2000 was 1360 (Census 2000) with 73% over age18.

In Ekalaka, the county seat and only incorporated town, population 410, 30% of the residents are over 65 compared to 18% county-wide and 12.4% nationally. This documents the high percentage of senior citizens live in Ekalaka, and the need for close medical access. All 811 housing units in Carter County are single family owned homes

As previously mentioned, 38% of county is BLM land. A new subdivision is being planned near Ekalaka although building hasn't commenced.

Carter County has 835 miles of county road. These roads are maintained by the county road crew. Funding is limited in the county and basic maintenance is done on a priority basis. Gravel is hard to find and expensive to haul, so many of the roads have minimal gravel. Though roads may not always be thought of in the light of PDM, in Carter County, the roads are the lifelines for many people.

One project that the county feels would be of great value in preventing accidents is more signage marking curves, reflectors for all auto-gates (cattle guards), and in general better safety markings for the roads.

The LEPC and area citizens feel that more gravel on the many miles of roads can go a long way to assist residents to travel as needed for medical emergencies or other basic needs. Better gravel also could have prevented many accidents. Many accidents have occurred within the county on gravel roads. Some could possibly been prevented by proper warning signs. Road conditions can be life threatening to residents.

Weather and Highway 323 – Road Conditions

Highway 323 is a 72-mile stretch of Montana Secondary Highway between Ekalaka and Alzada, in the southeastern corner of Montana. Commerce, tourism, and public safety could be greatly enhanced for a multi-state and International region by the completion of this corridor. Large stretches of Highway 323 currently become impassable with the slightest amount of rain, forcing traffic to stop or be re-routed (which can add 170 to 240 miles of travel). Such conditions cause commerce through the region to come to halt, and cost truckers, agricultural producers, oil companies, and other industries substantial amounts of lost time and money, not to mention the cost of additional wear and tear on vehicles and equipment.

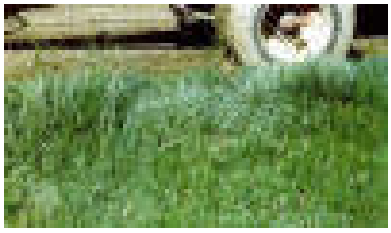
The road in its current condition is not safe for drivers, and prevents people living in this area from accessing many of the services most of us take for granted such as fire, ambulance, medical, and veteran's services. Important oil and gas pipelines that exist today or are planned for the future also parallel the route, making this a Homeland Security issue. Industry and law enforcement need to be able to get to these locations easily year-round in the event of an accidental or planned breach in the security of these vital energy pipelines.

When did this effort start? This effort started in 1924 (80 years ago), with the creation of the Canadian-U.S.-Mexico International Highway Association. Highway 323 is the ONLY stretch of road on the north-south International route the Association identified that was not paved by the time they disbanded in late 70's.

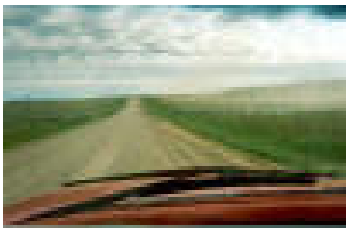
How many miles of road are left to pave? The first 25 miles south of Ekalaka were paved incrementally over the last several years using state Secondary funds. The remaining 47 miles south to Alzada are unpaved, and the middle 27 miles of this section are in very poor shape with little gravel left.

What will this project cost? Approximately $30 Million: $6.2 Million to reconstruct and gravel the first 12-mile stretch; $7.9 Million to secure right-of-way, reconstruct and gravel the next 15-mile section; and $15.9 Million to pave the entire 47 miles. There is no gravel in Carter County that meets Montana Dept. of Transportation (MDT) specifications, which makes this project more expensive than many other highway projects. Gravel and plant mix material will need to be hauled in excess of 100 miles one-way.

In the spring of 2003 Alzada Sheriff Bill Walker took these photos of a logging truck on the "Highway" in spring 2003. The truck driver had given up and left his truck to be moved after the roadway dried. As Mr. Walker noted on his photos, this is NOT a construction zone - it is what people driving Highway 323 have to deal with every day. (Click on each photo to see a larger version.)



In the summer and fall of 2003**,** Carter County Commissioner Jim Courtney and Ekalaka resident Llane Carroll took these photos of Highway 323 in August and September of 2003. It took less than a half-inch of rain to change the road from a dust cloud to the muddy mess shown. (Click on each photo to see a larger version.)

Highway 323 Closer than Ever to Completion (4/16/04)
By Erin Lutts, Mid-Rivers Communications

About 50 people filled the Community Hall in Alzada, Montana, on Thursday night, April 15, to talk about the progress of the on-going effort to pave Montana Secondary Highway 323 between Ekalaka and Alzada. Attendees included several Alzada area residents, as well as interested parties from Baker, Ekalaka, Belle Fourche, and other South Dakota and Wyoming towns. Special guests included Transportation Commissioner Nancy Espy, State Representative Carol Lambert, and all the County Commissioners from both Carter and Fallon Counties.

Lutts also discussed the status of the nation's six-year transportation funding bill (TEA-21, TEA-3) and where the Highway 323 project sits in regard to that bill. Congressman Rehberg was able to include a $23 Million earmark for Highway 323 in the House version of the TEA-21 reauthorization, which passed the House on April 2. The Senate version of the bill passed earlier with no specific funding for the project. The Senate and the House will now designate conferees to a Conference Committee that will try to hammer out the differences between the two bills and create one final version that everyone can live with.

All county roads need more gravel as are passable only with four-wheel drive when it rains or snows. This makes it at high risk for medical and emergency situations.

2. Description of methodology used to prepare estimate (worksheet 4-5)
Land Use Property Values by Sub-Area based on depreciated. Table 3-6e shows the range in value of homes with the owners living in them, the number of homes in that range and the percent make up of that range. This information is according to the 2000 census. The larger property values do include their farm and ranch operations that are on those properties.

IV MITIGATION STRATEGY 201.6(c) (3) (i) 3-30, 4-6

Mitigation Strategy

4.1 Goals, Objectives, and Proposed Actions

Goal 1. Flood mitigation to improve drainage

Objective 1.1 Improve drainage within Ekalaka

a. Install larger culverts
b. Mitigate accidents with culverts rather than old bridges

Goal 2. Improve communications

Objective 2.1 Radio Communication

a. Radios needed for all responders
b. Repeater towers placed to cover all areas of the county

Objective 2.2 Weather Radio

a. Improve weather radio reception by installing booster repeaters
b. Provide weather radio's for critical population centers
c. Use weather radio all hazard alert system as warning
d. Educate public on use and advantages of weather radio

Objective 2.3 Improve Cell phone communication

a. work with Mid Rivers to add cell towers within the county

Goal 3. Forestry Management:

Objective3.1 Educate those living within forested areas

a. Provide education on defensible space
b. Maintain and improve access to public and private forest lands
   - Keep roads in forested areas open to aid fire fighting efforts.

Objective 3.2 Utilize the Carter County Fire Mitigation Plan

a. Educate the public as to the objectives and value of the plan
b. Implement the Fire Mitigation Plan

Goal 4. Pulbic Safety : Carter County

Objective 4.1 Mitigate road hazards within county

a. Procure and install signs for county marking such hazards as:
   - Auto gates
   - Sharp curves
   - Bridges

b. Work with road crew to identify hazards within county

Objective 4.2 All-weather storage for equipment

a. Construct storage building for equipment
   - Equipment lasts longer and performs better if stored inside
   - Equipment is ready to use if stored out of inclement weather

Objective 4.3 Obtain needed lifesaving response equipment

a. Obtain jaws of life equipment for the county
b. Ambulance

Objective 4.4 Prepare Vulnerable populations for winter weather

a. Provide education for the public on winter survival
b. Provide education on hazards when power outages occur
   - Develop list of residents needing assistance if power outage occurs in extreme weather
   - Present educational materials to schools on winter travel safety

Objective 4.5 Prepare vulnerable populations for extreme summer storms or heat

a. Provide Lightning storm education
   - Provide lightning safety information to county

b. Provide education on heat related illness
   - Heat stroke
   - Heat Exhaustion

c. Provide basic weather observation training for residents

Goal 5. Public Safety for Town of Ekalaka

Objective 5.1 Install safe sidewalks within downtown area of Ekalaka.

a. Install sidewalks on east side of Main Street
   - Sidewalks need to be safe, especially for elderly or handicapped residents to lessen the risk of falling
   - Develop ordinance for cleaning sidewalks as a public safety issue.

Objective 5.2 Obtain needed lifesaving equipment

a. Jaws of life
b. Another ambulance

Objective 5.3 All weather storage for equipment/training room

a. Construct storage building for equipment
b. Provide a training room for responders

Goal 6. Improve Transportation within Carter County

Objective 6.1 Provide all weather road access for residents

a. Pave remainder of Highway 323, to complete a paved highway from Ekalaka to Alzada, the north/south route through the county.
b. Develop a plan for improving all county side roads
c. Procure more suitable gravel and improve county roads
d. Continue efforts to improve all weather travel within the county

Description of Mitigation Goals (Projects)

Goal 1. Flood mitigation to improve drainage

Objective 1.1 The drainage in areas of Ekalaka is marginal. The bridges are old, narrow, and not always in best condition. If many of the bridges were replaced with culverts, the drainage would improve and the safety factor of the bridges would improve. The culverts could prevent accidents.

Goal 2. Improve communications

Objective 2.1 Radio communication is necessary for all responders. More radios are needed during an event to keep communication flowing. Repeater towers must cover the county to provide the best response during an event. . A grant through the Department of Justice has been written for two repeaters, two hand-held 6-watt two-way radios and two mobile units to help improve communications. The road crew, ambulance, fire, law enforcement are all on this system. Dispatching covers four counties: Prairie, Fallon, Custer and Carter.

Objective 2.2 Weather Radio. Weather radio would be useful in any catastrophic event. Carter County has limited radar coverage. This also must be improved, but that funding would have to come to the National Weather Service. At this time, population does not warrant the expense. Improved weather radio reception throughout the county would improve if more weather radio boosters were installed on towers in the county. Weather Radio can serve as an all hazard alert system. Carter County needs improvement in weather radio reception and coverage. If weather radio was more available within the county, education programs within the county could alert citizens as to the functions and advantages of weather radio within the county.

Objective 2.3 Cell phone communication needs to improve within the county. This is an extremely remote county and cell service has dictated life and death situations, as far as calling for responders to an event. The county must encourage and work with companies such as Mid-Rivers to encourage better cell phone service.

Goal 3. Forestry management needs to include keeping roads open in the forest. Since Carter County is 38% public lands, the county would like to focus on more cooperation between agencies.

The county supports thinning the forested area around Ekalaka. The BLM has a $40,000 project to write the plan to thin timber especially around the Ekalaka hills close to town as housing is intertwined in the forested area. The people at the meeting felt this was a high priority to thin the forest and monitor the forestry management as this could create a great loss of life and property, if not properly managed.

Education programs for the residents on the usefulness of the Carter County Fire Mitigation Plan and encouraging residents to participate on private lands is important to any fire mitigation efforts.

Goal 4. Public Safety: Carter County

Objective 4.1 Mitigate road hazards within the county

Carter County would like to obtain and install signs for marking hazards such as auto-gates, sharp curves, bridges, and other areas of possible danger. At this time only very minimal signs are located within the county. The cost of doing such a project is not within the local budget. The road crew would be asked to assist with locating areas where signs are needed.

Objective 4.2 All weather storage for equipment. Carter County weather is extreme. The temperature can vary from 115 degrees F. to -50 degrees F. Snow, hail, wind, and rain all play a part in the weather. Equipment lasts much longer and requires less maintenance if not left out in the extreme weather conditions. Building(s) to store response equipment could assist responders in shorter response time.

Objective 4.3 Obtain needed lifesaving response equipment. Carter County is in great need of a "jaws of life" system. During a highway accident on un-paved highway 323 in Dec. 2003, Jaws of Life had to come over 60 miles from Baker, Montana to free a trapped victim. The weather was very cold, and neighbors brought space heaters to the scene. Luckily, space heaters and a portable generator were available at a neighboring ranch. This would not always be the case. Also, Carter County is in need of another ambulance to cover while the main ambulance is out of the county transporting patients. This seems to happen quite frequently, and the present second ambulance is not always reliable.

Objective 4.4 Prepare vulnerable populations for winter weather

Provide educational programs for the public on winter survival. Provide education to residents on the necessity of safe heat in the event of a long power outage in severe weather. A list of residents needing assistance in the event of a power outage has been developed and is in constant need of updating. The elderly especially do not want to bother anyone, and can become hypothermic before they realize they are cold. Since this is a large remote county, winter travel education is valuable to everyone. A program has been developed and needs to be presented to school students as well as adults on a regular basis.

Objective 4.5 Prepare vulnerable populations for extreme summer storms or heat

Provide lightning safety information for the county and provide education on heat related illness, such as heat exhaustion and heat stroke to the public. A regular weather spotter training is held in the county, to educate residents on the need for weather spotters. Radar coverage is very minimal in Carter County.

Goal 5. Public Safety: Town of Ekalaka

Objective 5.1 Install safe sidewalks on the east side of Main Street. At this time, the sidewalk is in poor repair on much of the street. It poses a safety hazard for the handicapped and elderly resident. Not all residents are able to keep their sidewalks clean during the winter. This issue must be addressed as a safety issue for the residents using the sidewalks.

Objective 5.2 A jaws of life and another ambulance are a need within the county and town. If an event caused a building to collapse within Ekalaka, a jaws of life could be necessary to remove victims.

Objective 5.3 All weather storage for equipment/training room. Ekalaka needs a large building to not only house all the fire fighting and other response vehicles, but a training room/meeting room for responders is also a necessity. Responders need to continually train to stay current with certification. They need a place to readily to this.

Goal 6. Improve Transportation within Carter County

Objective 6.1 Provide all weather road access for residents. The remaining 47 miles of Highway 323 need to be paved. This will not only provide a north-south route through the county, but will give greater access to emergency medical care. This route is not only the major artery for commerce through the county, it is also a major route for school students, and county residents. When it comes to roads, rural Carter County is in great need of improvement. However, until funding can be found for such a project, it will not be feasible. Though roads may not be thought of as PDM, in Carter County, the roads are the lifelines for many residents. The Carter County LEPC is in support of any funding that can be found to improve the roads within the county**.. Pave Highway 323 to Alzada** and the connection to Rapid City. This would lessen the response time and evacuation time, which now pose a risk to life. Most medical personnel talk about the golden hour, the first hour after an injury or a heart attack as being the most crucial to get medical treatment. In Ekalaka it's jokingly called a Copper Afternoon, as four hours is as fast as anyone can get major medical help.

The paving of this road would also allow more county funding, time and money, to be spent maintaining the remainder of the 835 miles of county roads. Many county roads are passable only in dry weather due to marginal gravel and improvements. Funding is limited in the county and basic maintenance is done on a priority basis. More gravel on the many miles of roads can go a long way to assist residents to travel as needed for medical emergencies or other basic needs. Gravel is hard to find and expensive to haul, so many of the roads have minimal gravel. Though roads may not always be thought of in the light of PDM, in Carter County, the roads are the lifelines for many people.

Many accidents have occurred within the county on gravel roads. One project that the county feels would be of great value in preventing accidents is more signs marking curves, reflectors for all auto-gates (cattle guards), and in general better safety markings for the roads. . Some could possibly been prevented by proper warning signs. Better gravel also could have prevented many accidents. We feel that the road conditions can be life threatening to residents.

4.3 Identification and Analysis of Mitigation Measures 201.6© (3) (ii) 3-34

Table 4-3 shows the analysis of proposed mitigation actions and projects with particular emphasis on new and existing buildings and infrastructure. How it was scored is identified below:

Cost (including management):	3 Score	Low < $10,000
	2 Score	Moderate $10,000-$50,000
	1 Score	High >$50,000
Population Impacted:	1 Score	Low < 25% of population to benefit
	2 Score	Moderate 25%-75% of population to benefit:
	3 Score	High > 75% of population to benefit
Property Impacted:	1 Score	Low < 25% of property impacted
	2 Score	Moderate 25%-75% of property impacted
	3 Score	High > 75% of property impacted
Mitigate # of hazards:	1 Score	Low - Priority 1-3 Hazards
	2 Score	Moderate - Priority 4-8 Hazards
	3 Score	High - Priority 9-14 Hazards
Benefit to cost[6]		
Feasibility:	< 5 Score	Low
	6-8 Score	Moderate
	9+ Score	High

[6] A high benefit to cost ratio means it would be a good project to fund, with large community support and benefits to population and property.

Carter County Analysis of Proposed Mitigation Actions
Table 4-3

Goal	Project	Cost	Population impacted	Property impacted	Mitigate # of hazards	Benefit to cost Feasibility
Flood Mitigation	Install Larger Culverts	High	Moderate	Moderate	Low	Moderate8
Communication	2 way radios for emergency personnel	Low	Moderate	Low	High	High 9
	Weather radios	$20/each	Moderate	Low	High	High 9
	Weather Radio Boosters	moderate	high	high	moderate	High 10
	Add cell towers	moderate	MidRivers Communication High	High	Low	High 9
Forestry Management	Education	Low	Low	Low	Low	Moderate 6
	Access	Moderate	Low	Moderate	Low	Moderate 6
	Implement Fire Mitigation Plan	High	Low	High	Low	Moderate 6
Public Safety, Carter County	Mitigate road hazards	Moderate	Moderate	Moderate	High	High 9
Public Safety Carter County	Equipment Storage	High	Low	High	Low	Moderate 6
Public Safety Carter County	Obtain lifesaving equipment	Moderate	Low	High	Low	Moderate 7
Public Safety Carter County	Winter Survival Education	Low	Moderate	Low	Low	Moderate7
Public Safety Carter County	Summer Extreme Weather Education	Low	Moderate	Low	Low	Moderate 7
Public Safety Ekalaka	Upgrade Sidewalks in Ekalaka	Moderate	Moderate	Low	Low	Moderate 6
Public Safety Ekalaka	Obtain Lifesaving equipment	Moderate	Low	High	Low	Moderate 7
Public Safety Ekalaka	Equipment Storage/Training Room	High	Low	High	Low	Moderate 6
Road improvement	Pave 47 miles of remaining gravel on highway 323	$23 million In congress budget. High	High	High	High	High 10
	Improve count y Gravel roads	High	High	High	High	High 10

4.4 Implementation of Mitigation Measures 201.6(c) (3) (ii) 3-36

Implementation Plan of Actions for Carter County

The priority score in the following chart is a score that reflects the community residents support of the projects. The scores are subjective and are subject to change at any given time. They are used as a tool to decide on project development and support in each jurisdiction.
Scoring from 10 to 1 with 10 being a high priority and 1 being a low priority.

Project Description	*Jurisdiction*	*Responsible Agency*	*Potential Funding Source(s)*	*Priority Score*
Flood Mitigation: *Replace old bridges with Culverts. Mitigate possible Accidents as well as flooding.*	*Ekalaka* *Carter County*	*Town of Ekalaka* *Carter County*	*Grants* *FEMA*	*10*
Improve Communications *Radios needed for all responders.*	*Carter County*	*Carter County*	*Grants*	*10*
Communications: *Repeater towers placed to cover all areas of the county.*	*Carter County*	*Carter County*	*Grants* *DHS*	*9*
WEATHER RADIO *Install weather radio repeaters On towers to cover the county.* *Dual purpose for weather and all hazard* *Emergency notification*	*Carter County*	*Carter County* *NWS*	*Grants/ FEMA* *Southeast Electric* *Mid-Rivers*	*10*
Weather Radio *Educate the public on the use And value of weather radio.* *Encourage use and install in public buildings.*	*Town of Ekalaka* *Carter County*	*Carter County* *DES* *NWS*	*NWS* *Grants* *FEMA*	*9*
Cell Phone coverage *Improvement/ add towers to the County*	*Carter County*	*Mid-Rivers* *Carter County*	*Mid-Rivers* *Grants*	*10*

Forestry Management *Educate on defensible space*	*Carter County*	*USFS* *BLM* *DES*	*USFS* *FEMA*	*10*
Forestry Management *Maintain & Improve access to public and private forest lands as an aid in firefighting efforts*	*Carter County*	*BLM* *DNRC* *USFS* *Carter County*	*BLM* *USFS* *Carter County* *FEMA*	*10*
Implement Fire Mitigation Plan	*Carter County*	*BLM* *DNRC* *USFS* *Carter County*	*BLM* *DNRC* *USFS* *Carter County* *Pivate Funding*	*10*
Public Safety Mitigate road hazards within the county by adding signage of hazards	*Carter County*	*DOT* *Carter County Road Dept*	*FEMA* *DOT*	*10*
Public Safety: All weather storage for equipment	*Carter County*	*Carter County*	*RCA* *Carter County Grants*	*10*
Obtain needed Lifesaving Equipment: eg: Jaws of life and Another ambulance	*Carter County*	*Carter County* *Fire Dept.* *EMS*	*FEMA Grants* *Local Funding*	*9*
Prepare vulnerable populations for winter weather: Provide education on winter survival and safety	*Carter County*	*DES* *NWS*	*NWS* *DES*	*8*
Prepare Vulnerable Populations for extreme summer weather by providing spotter training for residents and educational materials on issues	*Carter County*	*DES* *NWS*	*NWS* *DES*	*8*
Public Safety *Install safe sidewalks on east Main Street*	*Town of Ekalaka*	*Town of Ekalaka*	*DOT* *Grants* *Local Funding*	*7*
Public Education: Clean Sidewalks, possible ordinance	*Town of Ekalaka*	*Town of Ekalaka*	*Local*	*7*
Obtain needed lifesaving equipment, eg : Jaws of life, another ambulance	*Town of Ekalaka*	*EMS* *Fire Department*	*FEMA* *Other Grants Donations*	*9*

All weather storage for Equipment	*Town of Ekalaka*	*Town of Ekalaka, Fire Dept. Dahl Memorial*	*Grants, RCA Local Funding Donations*	*9*
Improve Transportation within Carter County by providing all weather road access within county With the principal project being pavement on all of highway 323	*Carter County*	*Carter County MDOT*	*US Congress MDOT Carter County*	*10*
Develop plan for improving all county side roads for all weather travel, this plan may include some special projects that could be funded as mitigation by FEMA	*Carter County*	*Carter County*	*Carter County FEMA*	*9*

Action plan that describes how mitigation actions and priorities will be prioritized implemented and administered. Mitigation projects will be considered for funding through federal and state grant programs, and when other funds are made available through the County. While Highway 323 and local road improvement are not usually mitigation projects, in Carter County the residents feel the roads are a lifeline for residents. The LEPC wishes to keep road improvement as a high priority as far as projects within the county. While the LEPC realizes that mitigation funding may not be available through this plan, the LEPC does wish to have the road issues included as a portion of what the local community feels is of high importance. This is a vast and rural county. The local residents are very accustomed to "making do" with what is available. However, the residents do feel that roads that are reasonably all weather roads should no longer be a luxury within the county. Fundraisers have been held for Highway 323 with many individual donations of time and effort working with congressional delegates, department of transportation, state and regional officials and at community meetings. The LEPC is working in cooperation with the BLM on wildfire management and possible funding to mitigate the hazards.

The LEPC, a consortium of local officials and disaster planning personnel, will be the coordinating agency for project implementation. The LEPC has the capacity to organize resources, prepare grant applications, and oversee project implementation, monitoring, and evaluation. Coordinating organizations may include local, county, or regional agencies that are capable of, or responsible for, implementing activities and programs. The DES Coordinator will be responsible for mitigation project administration.

V. PLAN MAINTENANCE PROCEDURES

5.1 Monitoring Evaluating and updating the plan. 201.6(c) (4) (ii) 3-44

Method and schedule for monitoring, evaluating and updating the plan within 5 years.

The LEPC committee who has been the leading group in this project will continue to meet on a regular basis for their other disaster and emergency planning, with public input always encouraged and invited through the media. This plan will be maintained and reviewed by them and the public at least annually at one of their regular quarterly meetings. If a possible project can be funded, immediate action will be done by the LEPC to see that it is completed. Upon completion of any project, the project lists will be reviewed and amended as necessary. This process will include the public and notice will be given of such a meeting in the local newspaper. All LEPC meetings are open to the public.

5.2. Implementation through Existing programs 201.6(c) (4) (ii) 3-48

Process for incorporating the requirements of the mitigation plan into other existing mechanisms (such as comprehensive or capital improvement plans, etc.)

In cooperation with the Bureau of Land Management, which controls 38% of land in Carter County, plus state, county and local agencies, we will work together to maximize our resources for disaster mitigation. We are also working on the federal level for funding or Highway 323. Carter County does not have an active Land Planning board at this time. However, a comprehensive action plan for Carter County is being written under a grant through the Forest Service. This plan will also encompass goals of the county residents. An action plan has been developed for the Town of Ekalaka and many improvements have been made within the town due to this plan and grant funding.

5.3 Continued Public Involvement 201.6(c) (4) (iii) 3-50, 4-6

Discussion on how community will continue public participation in the plan maintenance process.

The LEPC committee who has been the leading group in this project will continue to meet on a regular basis for their other disaster and emergency planning, with public input always encouraged and invited through the media. The LEPC meetings are all public meetings. The LEPC includes members from county government as well as the incorporated town of Ekalaka. This plan will be maintained and reviewed by them and the public at least annually regular meetings. At this time a **January** meeting is the probable time of updating the plan, with other meetings scheduled as necessary.

A Review of PDM has been completed by the Carter County LEPC as certified by my signature as LEPC Chairman. The LEPC includes representatives from Carter County and the Town of Ekalaka. A list of those assisting with the update and attending the meeting will be included in the annex each year, or more often as necessary.

Date_____ _____
LEPC CHAIRMAN

Date_____ _____
LEPC Chairman

Date_____ _____
LEPC Chairman

Date_____ _____
LEPC Chairman

Date_____ _____
LEPC Chairman

Date_____ _____
LEPC Chairman

Date_____ _____
LEPC Chairman

VI. References/ Resources

National Weather Service, Western Regional Climate Center

http://www.hazardmaps.gov

Storm Events Database http://www.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms

Drought Monitor http://www.drought.unl.edu/risk/us/compare.htm

Societal Impacts of Weather http://sciencepolicy.colorado.edu/socasp/toc_img.html

http://www.fema.gov (1-800-480-2520)

http://gis.doa.state.mt.us- property values by lot

http://www.fs.fed.us/land/wfas/fd_class.gif wildfire

Billings Weather service – 22

http://www.state.mt.us/dma/des/Library/Daniels_County_Plan.pdf

http://www.wrcc.dri.edu/htmlfiles/mt/mt.ppt.ext.htm

Western Regional Climate Center http://www.wrcc.dri.edu

U.S. Forest Service

http://factfinder.census.gov/servlet/ReferenceMapFramesetServlet

VII.APPENDIX

CARTER COUNTY PRE-DISASTER MITIGATION PLANNING MEETINGS AND ATTENDANCE

JANUARY 31, 2003

LEPC MEETING, DISCUSS HAZARDS OF COUNTY AND THE BASICS OF A PDM PLAN:

Elston Loken	Ekalaka Public Works, EMT, Fire Chief
Edward Powell	Weed Board
Joe Carey	Mayor of Ekalaka
Janell Dean	Town of Ekalaka, Clerk
Tom Carroll	Carter County Road Dept., Fire
Dr. James G. Tooke, DVM.	Veterinarian
Milton Markuson	Carter County Commissioner, LEPC Chairman
Mehdi Merred	Dahl Memorial Healthcare Administrator
Larry Brence	Extension Service
Jim Pardee	EMT
Phil Cook	Dahl Memorial Healthcare, Safety
Steve Rosencranz	Carter County Commissioner
Jim Courtney	Carter County Commission Chairman
Candy Loehding	Carter County DES/ LEPC Secretary

FEBRUARY 25, 2003

LEPC MEETING: MOTION MADE TO CONTRACT THE WORK FOR THE PLAN WITH PEGGY IBA OF GLENDIVE:

Rusty Jardee	Sheriff, Rural Fire Warden, Coroner
Candy Loehding	DES, LEPC Secretary
Janell Dean	Town of Ekalaka, Clerk
Mehdi Merred	Dahl Memorial Administrator
Dale Diede, PA-C	PA-C, Dahl Memorial Clinic, Public Health Officer
Steve Rosencranz	Commissioner
Tom Carroll	Road Dept., Fire, EMT

APRIL 5, 2003

CHAMBER OF COMMERCE MEETING:

Candy Loehding, LEPC Secretary and DES did a presentation to the Carter County Chamber of Commerce on the Pre-Disaster Mitigation Planning that will be done. The chamber then followed with a letter of support for the project.

SEPTEMBER 15, 2003

LEPC MEETING:

Peggy Iba	Contractor for plan
Marion Kerr	Public Health Nurse
Ed Powell	Carter County Weed Board
Phil Cook	Dahl Memorial Healthcare, safety officer
Glenda Bailey	Dahl Memorial Healthcare, Nurse
Janell Dean	Town of Ekalaka Clerk
Elson Loken	Town of Ekalaka Public Works, EMS, Ekalaka Volunteer Fire Dept.
Rusty Jardee	Sheriff, Rural Fire Warden
Dale Diede, PA-C	Physician Assistant-Certified, Dahl Memorial Clinic, Public Health Officer
Terri Buck	EMS
Milton Markuson	County Commissioner, LEPC Chairman
Steve Rosencranz	County Commissioner
Carla Dowdy	Dahl Memorial Healthcare, Physician Assistant, in training
Candy Loehding	DES, LEPC Secretary

DECEMBER 1, 2003

PUBLIC MEETING, LEPC MEETING:

Mehdi Merred	Dahl Memorial Healthcare Administrator
Terri Buck	EMS
Rusty Jardee	Sheriff, Rural Fire Warden
William Walker	Undersheriff
Elston Loken	Ekalaka Public Works, EMT, Ekalaka Volunteer Fire Chief
Neil Kittelmann	Town of Ekalaka, Police
Tom Carroll	Carter County Road Crew, Fire, EMT
Wade Northrop	Carter County High School, Ekalaka Elementary
Milton Markuson	County Commissioner
Bill Crago	Community Citizen, Volunteer Law
Candy Loehding	DES, LEPC Secretary
Peggy Iba	Contractor

OCTOBER 4, 2004

LEPC MEETING:

Patricia Rogers	Dahl Memorial Healthcare, DON
Ed Powell	Carter County Weed Crew
Deb Yost	Ambulance Director
Jack Hamblin	Southeast Electric, CEO
Charles Parks	Rural Fire, Citizen
James Courtney	Carter County Commission Chairman
Steve Rosencranz	Carter County Commissioner
Rusty Jardee	Sheriff, Rural Fire Warden
Chuck Lee	911 Director, Baker, MT
Nadine Elmore	Dahl Memorial Healthcare Administrator
Dale Diede, PA-C	Dahl Memorial Healthcare, PA-C, Public Health Officer
Candy Loehding	DES Coordinator, LEPC Secretary

OCTOBER 18, 2004

Rusty Jardee	Sheriff, Rural Fire Warden
Ed Powell	Weed Board
Norman Parrent	MT DES, Dist. IV
Candy Loehding	DES/ LEPC Secretary
Patricia Rogers	Dahl Memorial Healthcare, DON
Milton Markuson	LEPC Chairman, County Commissioner
Steve Rosencranz	Commissioner
James Courtney	Commission Chairman